

# Draft Permit for The 222-S Laboratory Complex

## INTRODUCTION

The 222-S Laboratory Complex is located in the 200 West Area of the Hanford Facility. It contains four (4) active Treatment, Storage, and Disposal (TSD) units: the Dangerous and Mixed Waste Storage Area (DMWSA); Room 2-B; Room 4-E, and the 219-S Waste Handling Facility (described in Attachment AA). These TSD units treat and store dangerous and/or mixed waste generated from the 222-S Laboratory Complex analytical service activities and from other waste management units on the Hanford Facility or from off-site generators. This permit sets forth the operating conditions for these TSD units.

The Permittee must comply with:

- All terms and conditions set forth in this permit and in Attachments AA through JJ;
- All applicable state regulations contained in Chapter 173-303 Washington Administrative Code (WAC) and as specified in this permit; and
- The applicable federal regulations, including 40 Code of Federal Regulations (CFR) Parts 260 through 266, Part 268, and Part 270 that have been incorporated by reference into Chapter 173-303 WAC, and as specified in this permit.

If, and when, this permit and its attachments or regulations conflict, the wording of the permit shall prevail.

“Applicable state and federal regulations” are state regulations and statutes in effect on the date of permit issuance and those federal regulations incorporated by reference into these state regulations.

## DEFINITIONS

“**222-S Laboratory Complex**” refers to the treatment and storage units and/or the geographical area within the control of the 222-S Laboratory Complex management, as defined in the Hanford Facility Dangerous Waste Permit Application, 222-S Laboratory Complex, DOE/RL-91-27.

“**222-S Analytical Laboratory**” refers to the concrete structure located within the complex.

“**Facility**” refers to the 222-S Laboratory Complex.

### A. **222-S LABORATORY COMPLEX SPECIFIC CONDITIONS**

#### A.1 **LIST OF ATTACHMENTS**

The following listed documents are hereby incorporated, in their entirety, into this permit. These documents are excerpts from the Permittee's Dangerous Waste Permit Application for the 222-S Laboratory Complex (submitted on August 30, 2000) and supplemental

documentation (added on October 10, 2000, and March 9, 2001). These incorporated attachments are enforceable by this permit.

Attachment AA	Facility Description (Section 2.1 of the Permit Application)
Attachment BB	Part A Dangerous Waste Permit Form, Revision 9
Attachment CC	Waste Analysis Plan (Chapter 3.0 and Appendix 3A of the Permit Application)
Attachment DD	Container Management (Section 4.1.1, Section 4.2, Figures 4-1, 4-2, and 4-3, and Table 4-1 of the Permit Application)
Attachment EE	Dangerous Waste Tanks and Process Equipment (Section 4.1.2, Section 4.3, and Figure 4-4 of the Permit Application)
Attachment FF	Inspection Schedules (Section 6.2, and Tables 6-1, 6-2, and 6-3 of the Permit Application)
Attachment GG	Prevention (Section 6.3.1.1, Section 6.3.1.2, and Section 6.5 of the Permit Application)
Attachment HH	Contingency Plan (Chapter 7.0, Table 7-1, and applicable sections of Appendix 7A of the Permit Application)
Attachment II	Personnel Training (Chapter 8.0 and Table 8-1, "222-S Specific Training Matrix" of the Permit Application)
Attachment JJ	Closure Plan (Chapter 11.0 of the Permit Application)

## **A.2 STANDARD CONDITIONS AND GENERAL FACILITY CONDITIONS**

In addition to the conditions in this chapter, the Permittee must comply with all applicable portions of the Dangerous Waste Portion of the Resource Conservation and Recovery Act (RCRA) Permit for the Hanford Facility.

## **A.3 PERFORMANCE STANDARDS**

The Permittee shall operate and maintain the Facility in a manner to ensure the performance standards in WAC 173-303-283 are met.

## **A.4 GENERAL WASTE MANAGEMENT**

- A.4.1 The Permittee is authorized to accept, from on-site and off-site generators, the wastes specified in Attachment BB (Part A Permit Forms) as long as the off-site generator is operated by the United States Department of Energy (USDOE) and has a valid State/Environmental Protection Agency (EPA) identification number.

- A.4.2 All dangerous/mixed wastes must be managed only in areas authorized for dangerous/mixed waste management under the conditions of this permit, except as allowed under WAC 173-303-200. The authorized dangerous waste management areas at the 222-S Laboratory Complex are the DMWSAs, the designated portion of Room 2B, Room 4E, and the 219-S Waste Handling Facility.
- A.4.3 Land Disposal Restricted waste received at the 222-S Laboratory Complex must have a means of meeting Land Disposal Restrictions (LDR) requirements (e.g., storage is allowed solely for the purpose of accumulating such quantities of wastes as necessary to facilitate proper recovery, treatment, or disposal). LDR restricted waste may be received and accumulated at the 222-S Laboratory Complex provided that recovery, treatment, or disposal pathways are identified and scheduled in accordance with Hanford Federal Facility Agreement and Consent Order (HFFACO) milestone M-26 requirements.
- A.4.4 Waste may be transferred from the 222-S Laboratory Complex to permitted TSDs only, in accordance with the receiving TSD's waste acceptance criteria.

## **A.5 WASTE ANALYSIS**

- A.5.1 When laboratory analytical methods are required to designate the waste, the Permittee must ensure that the test procedures listed as acceptable by WAC 173-303-110 and Appendices II and III to 40 CFR Part 261, or approved equivalent methods, are used.
- A.5.2 The Permittee is responsible for obtaining accurate and complete information for each waste stream. Inaccurate or incomplete waste analysis information provided by the generating site is not a defense for noncompliance by the Permittee with the waste management requirements and conditions in this permit, Chapter 173-303 WAC, and the LDR in 40 CFR Part 268, as incorporated by reference in Chapter 173-303 WAC.

## **A.6 RECORDKEEPING**

- A.6.1 The Facility Operating Record shall include, but not be limited to the following information:
- a. Records and results of waste analyses required by Attachment CC and WAC 173-303-380(1)(c) that include, at a minimum:
    1. The date(s), exact place(s), and time(s) of sampling or measurements;
    2. The name(s) of the individual(s) who performed the sampling or measurements;
    3. The date(s) analyses were performed demonstrating that EPA SW-846 holding times were satisfied, and, if applicable, an explanation of why they were not;
    4. The name of the individual(s) who performed the analyses;
    5. The analytical techniques or methods used, including revision number of the method used;
    6. The analytical results including applicable laboratory flags; and
    7. The Quality Assurance/Quality Control (QA/QC) summary.

- b. Results of all waste analyses and trial tests (and any other documentation showing compliance with the requirements of permit conditions, including special container provisions for incompatible waste).
- c. A log of waste added into the 219-S Waste Handling System so a record of the waste in the tank is known. Each entry must include, at a minimum, the following information:
  - 1. Date and time of waste introduction;
  - 2. Waste stream;
  - 3. Volume of waste added (excluding flush water);
  - 4. Waste designation;
  - 5. Waste source; and
  - 6. Name of worker making addition.

## **A.7 CLOSURE**

- A.7.1 One hundred and eighty (180) days prior to closure, the Permittee must submit a Sampling and Analysis Plan and a revised Closure Plan. An Ecology approved Sampling and Analysis Plan, and a revised and approved Closure Plan are due sixty (60) days in advance of the beginning of final closure.
- A.7.2 At least forty-five (45) days before initiating closure, the Permittee must provide a Notification of Closure pursuant to requirements in WAC 173-303-610(3)(c).
- A.7.3 The Permittee must conduct closure according to Permit Attachment JJ as modified by permit closure conditions A.7.1 through A.7.6.
- A.7.4 Ecology may require additional investigation and/or sampling after the Permittee implements the approved Sampling and Analysis Plan if Ecology determines that the sampling and analyses have not adequately demonstrated whether clean closure has been achieved. Such a requirement shall constitute an agency action subject to appeal under Chapter 43.21B RCW. Additional sampling and analysis may be required for the following reasons:
  - 1. Specialized sample collection or analytical techniques are required to ensure adequate quantitation limits for chemical constituents of concern; or
  - 2. Results indicate the need to analyze for additional constituents at certain locations; or
  - 3. Results indicate additional soil or groundwater sampling is required at certain locations; or
  - 4. Other reasons indicate the Sampling and Analysis Plan has not adequately demonstrated whether clean closure has been achieved.

- A.7.5 In addition to the activities specified in Permit Attachment JJ, the activities of an independent registered professional engineer to assure that closure is conducted in accordance with the approved plan and requirements of this permit must specifically include, but are not limited to, field observation and record review of the following:
1. Sampling procedures;
  2. Locations of soil and concrete sampling to ensure locations were as specified in the Sampling and Analysis Plan;
  3. Sample labeling and handling, including chain of custody procedures; and
  4. Procedures to decontaminate concrete or metal to meet the Model Toxics Control Act (MTCA) cleanup standards or achieve a "clean debris surface," as specified in 40 CFR § 268.45, Table 1, concrete surfaces, as incorporated by reference in WAC 173-303-140.
- A.7.6 Documentation supporting the independent registered professional engineer's certification of closure must be submitted to Ecology with the closure certification required by WAC 173-303-610(6). In addition to the items in Attachment JJ, the documentation must include:
1. Lab and field data;
  2. A report that summarizes closure activities;
  3. A copy of all field notes taken by the registered professional engineer; and
  4. A copy of all radiological contamination survey results.

**A.8 DESIGN AND OPERATION OF THE FACILITY**

The Permittee shall provide copies of Engineering Change Notices (ECNs) affecting the 219-S Waste Handling Facility to Ecology within five (5) working days of initiating the ECN. Ecology will review all ECNs modifying the 219-S Waste Handling Facility, and inform the Permittee, in writing, within two (2) working days, whether the proposed ECN, when issued, will require a Class 1, 2, or 3 Permit Modification. If after two (2) working days Ecology has not responded, it will be deemed as acceptance of the ECN by Ecology.

**B. CONTAINERS**

**B.1 CONTAINER MANAGEMENT AREAS AND ACCUMULATION LIMITS**

- B.1.1 Subject to conditions in Attachment DD and Containers Permit Conditions B.1 through B.3, the Permittee may place or store containerized dangerous waste only in the individual areas listed below, as they are identified in Figure "222-S Laboratory Complex Container Storage Areas," and Photos "222-S Laboratory Complex Dangerous and Mixed Waste Storage Area," "222-S Laboratory Complex Room 2-B," and "222-S Laboratory Complex Room 4-E" of Attachment BB.

<b><u>Container Storage Areas</u></b>	<b><u>Maximum Storage Capacity</u></b>
222-S Dangerous and Mixed Waste Storage Area (222-S DMWSA)	24,520 liters For solid and /or liquid dangerous and mixed waste
222-S Analytical Laboratory, Room 2-B	2,500 liters For solid and/or liquid mixed waste
222-S Analytical Laboratory, Room 4-E	1,450 liters For solid and/or liquid mixed waste

B.1.2 The Permittee shall only place or store the following dangerous and/or mixed waste in the storage areas listed in Permit Condition B.1.1 for Container Management Areas and Accumulation Limits:

1. Dangerous and/or mixed waste generated by the 222-S Laboratory Complex; or
2. Mixed waste generated at other Hanford Facility locations (off-unit) and mixed waste generated from USDOE off-site facilities, which has been transferred and accepted by the 222-S Laboratory Complex pursuant to the provisions in Attachment CC and this permit, with the purpose of being introduced into the 219-S Waste Handling Facility through Hood 16 in Room 2-B or hot cell drains.
3. The Permittee shall not place or store containerized dangerous and/or mixed waste, accepted by the facility pursuant to incoming wastes procedures in Attachment CC, in any area other than container storage areas as identified in Permit Condition B.1.1 for Container Management Areas and Accumulation Limits.

B.1.3 The Permittee shall limit the total liters of wastes and other materials to maximum capacities specified for the individual container storage areas listed in Permit Condition B.1.1 for Container Management Areas and Accumulation Limits.

B.1.4 All containers, including those that do not contain dangerous/mixed waste (e.g., exempt wastes, treatment chemicals, etc.) in any container storage areas listed in Permit Condition B.1.1 for Container Management Areas and Accumulation Limits shall be counted toward the capacity limits established by Permit Condition B.1.1 for Container Management Areas and Accumulation Limits. For the purpose of determining compliance with capacity limits, every container shall be considered to be full.

## **B.2 CONTAINMENT SYSTEMS**

B.2.1. The Permittee shall maintain the integrity of all containment systems for container storage areas.

- a. The Permittee shall repair cracks, gaps, loss of integrity, deterioration, corrosion, or erosion of containment grate, joints in containment cells, basins, sumps, spill pallets, and coatings.
- b. Until closure is completed, the Permittee shall maintain the following records of problems described in Permit Condition B.2.1.a. for Containment Systems within the secondary containment systems:
  1. Mapping of problem location.
  2. Documentation of problem repair, including a description of the method of repair.
  3. Dated photographs of area before and after repair.
  4. Name and signature of the person completing repair.

### **B.3 INSPECTION SCHEDULES AND PROCEDURES**

- B.3.1. The Permittee shall inspect the containers for proper packaging, labeling, marking, and waste tracking forms before transfer.

## **C. TANK SYSTEMS**

### **C.1 DANGEROUS AND MIXED WASTE TANK SYSTEMS**

- C.1.1 Subject to conditions in Attachment EE and Permit Conditions C.1 through C.5 for Tank Systems, the Permittee may store and/or process mixed wastes in the following tanks in the 219-S Waste Handling Facility (as identified in Figure “222-S Laboratory Complex Tank System Treatment and Storage Area” and Photo “222-S Laboratory Complex, 219-S Waste Handling Facility” of Attachment BB).

<b>Tank</b>	<b>Maximum Capacity</b>
# 101	Storage and treatment tank, 15,000 liters.
# 102	Storage and treatment tank, 15,000 liters.
# 104	Storage and treatment tank, 7,200 liters.

- C.1.2 The Permittee shall only store or treat the following mixed waste in the 219-S Waste Handling Facility tanks listed in Permit Condition C.1.1 for the Dangerous and Mixed Waste Tank Systems:

1. Mixed waste generated by the 222-S Laboratory Complex; or
2. Mixed waste generated at other Hanford Facility locations (off-unit) or mixed waste generated from USDOE off-site facilities, which has been transferred to and accepted by the 222-S Laboratory Complex pursuant to the provisions in Permit Attachment CC and this permit.

3. The Permittee shall not manage dangerous and/or mixed waste in tanker trucks at the 222-S Laboratory Complex in any area other than the loading and unloading areas.
4. The Permittee shall not store dangerous and/or mixed waste in tanker trucks at the 222-S Laboratory Complex.

## **C.2 OPERATING REQUIREMENTS**

- C.2.1 The Permittee shall not place hazardous wastes or treatment reagents in the tank system if they could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail.

## **C.3 SECONDARY CONTAINMENT AND INTEGRITY ASSESSMENTS**

- C.3.1 Results of the integrity assessments shall be included in the Facility Operating Record until final closure and corrective action are complete and certified.
- C.3.2 Any tank system, including its secondary containment system, found to be leaking, or otherwise unfit for service, shall be immediately removed from service and the Permittee shall comply with the requirements of WAC 173-303-640(7). Such a tank system, including its secondary containment system, shall not be returned to service until the Permittee has obtained the required certification.
- C.3.3 The Permittee shall maintain the integrity of all containment systems for tank systems:
- a. The Permittee shall repair cracks, gaps, loss of integrity, deterioration, corrosion or erosion of containment cells, joints in containment cells, and sumps. Repairs shall be completed as soon as practical.
  - b. Until closure is completed, the Permittee shall maintain the following records of problems described in HFFACO Permit Condition C.3.3.a. within the 219-S Waste Handling Facility.
    1. Mapping of problem location.
    2. Documentation of problem repair, including a description of the method of repair.
    3. Name and signature of the person completing repair.
  - c. If repeating or persistent problems as described in Permit Condition C.3.3.a. occur in an area of a containment system, then the Permittee shall isolate that area from dangerous and/or mixed waste management activities until the area can be repaired in accordance with WAC 173-303-640(7).